

Existing Policy

ALL COST-EFFECTIVE ENERGY EFFICIENCY

Policy summary: With the Governor’s signing of the Green Communities Act of 2008, Massachusetts embarked on a path toward significant energy improvements in homes and commercial buildings. The Act required that the electric and gas utilities pursue all cost-effective energy efficiency, *i.e.* eliminating energy waste whenever it is cheaper to do so than buying additional supply. From 2010 to 2012 — the duration of the first three year plan — the state will invest more than \$2 billion, with an anticipated return of over \$6 billion for participants. The program is administered by the investor-owned utilities in the state and the Cape Light Compact, together known as Program Administrators (PAs). The PAs work under the guidance of the Energy Efficiency Advisory Council (EEAC), which represents a broad range of stakeholders.

Economy-wide GHG reductions in 2020	6.7 million metric tons; 7.1% ²³
Gigawatt (GWh) electricity savings in 2020	9,500 ²⁴
Million BTU (MMBTU) natural gas savings in 2020	36 million
Million BTU (MMBTU) heating oil savings in 2020	7.7 million
Cumulative net benefits 2010-2020 (discounted)	\$17.5 billion ²⁵
Jobs gained in 2020 (direct and indirect)	19,600 ²⁶

Clean energy economy impacts: From 2010 to 2020, the program will induce investments of \$10.2 billion in buildings, creating approximately 19,600 jobs in 2020. In addition, the program will generate \$17.5 billion in net benefits, largely in avoided future costs of energy and avoided energy system expansion. These savings will largely enter the local economy rather than flowing out of state and out of the country, while reducing living costs for residents and operating costs for businesses.

Rationale: A substantial amount of energy efficiency is cheaper than energy supplies now provided by coal, oil, natural gas, and nuclear power. However, due to various market barriers, investments in energy efficiency fall short of optimal, either for an individual organization or for

²³ 6.7 million tons is based on expansion of the efficiency programs since 2008, due to the Green Communities Act. The program savings from levels of efficiency spending prior to 2008 are excluded, since the emissions trend in the Business as Usual (BAU) projection is estimated to include them.

²⁴ Energy savings in 2020 are based on the full value of efficiency programs, including the spending levels that existed prior to 2008, in order to be consistent with DOER required reporting to the Department of Public Utilities (this differs from the calculation of GHG savings, as discussed in prior footnote).

²⁵ \$13.7 billion electric, \$3.4 billion natural gas, and \$0.5 billion fuel oil, all discounted to 2010 at a 2.5 percent real discount rate. Includes savings from 2010 to 2020 from the full value of efficiency programs, to be consistent with DOER required reporting to the DPU. DPU order 08-50-A directs programs to use a discount rate pegged to the 10-year Treasury note over the previous year. Rather than vary the rate year by year, 2.5 percent was used as a reasonable approximation of the real Treasury rate historically.

²⁶ Approximately 10,300 jobs from electric efficiency, 7,000 from gas efficiency, and 2,300 from heating oil efficiency. More than two-thirds of the employment gains are “indirect” and “induced” — due to lower energy bills causing greater respending of household and business incomes within the Massachusetts economy, and to purchases by efficiency-related companies from other businesses in the state.

the state as a whole. The PAs, as a primary point of contact with customers on energy, are well-suited to incentivize customers to undertake building energy improvements. Participation in energy efficiency could be increased greatly.

Policy design and issues: The PAs, with guidance from the EEAC and DOER, attempt to reduce consumption of electricity, natural gas, and heating oil by conducting energy assessments on buildings, and providing financial incentives for customers to implement a variety of efficiency measures, such as installing higher-efficiency lighting, HVAC systems and appliances; adding insulation to attics, walls, and basements; and reducing air leakage from buildings. Both technical and financial assistance are provided to developers of new buildings, such as the Energy Star Homes program and customized project support for commercial buildings.

There are a variety of market barriers that make achievement of all cost-effective efficiency a challenge. One of these is customers' lack of up-front capital to pay for efficiency investments, and the PAs are currently addressing this through providing subsidized financing, targeted to different types of customers. Another is the "split incentive" problem for rental space, when a tenant is paying the utility bills but only the owner has the ability to invest in efficiency measures. Efforts are also being made to address this issue.

GHG impact: The programs will reduce emissions by 6.7 million tons in 2020.

Other benefits: By reducing fossil fuel combustion, the program will help reduce criteria pollutants and other hazardous air pollutants, providing public health and environmental benefits.

Cost: From 2010 to 2020, the electricity, natural gas, and oil efficiency programs will generate \$27.7 billion of energy savings, at a cost of \$10.2 billion, yielding \$17.5 billion in net benefits for the state, largely in avoided future costs of energy and energy system expansion.

Experience in other states: Many states have energy efficiency programs operated by utilities within a similar framework. Massachusetts' program is one of the most well established in the nation, and its 2010-12 plan represents the largest per capita investment in energy efficiency in the country.

Uncertainty: It remains uncertain how much energy efficiency there is to be captured and what program elements will capture it.